Matrix element of the reaction...

and

$$\sigma_1(s_1) = \frac{k_{12}}{\sqrt{k_{23}^2+\mu^2}+\sqrt{k_{12}^2+M^2}} A_1 t_S^+ (\pi^- n \to \pi^- n); \quad (6a)$$

$$\sigma_2(s_2) = \frac{k_{12}}{\sqrt{k_{13}^2+\mu^2}+\sqrt{k_{12}^2+M^2}} (A_1 t_S^+ (\pi^+ n \to \pi^+ n) + A_2 t_S^+ (\pi^+ n \to \pi^0 p)); \quad (6b)$$

$$\sigma_3(s_3) = \frac{k_{12}}{2\sqrt{k_{12}^2+\mu^2}} \left\{ A_1 t_S^+ (\pi^- \pi^+ \to \pi^- \pi^+) + \frac{1}{2} A_2 t_S^+ (\pi^- \pi^+ \to \pi^0 \pi^0) \right\}. \quad (6c)$$

$A_1(s_1^0 s_2^0 s_3^0)$ is the amplitude of the reaction (1) with $W = (M + 2\mu)^2$. In addition $1/(x'-x-i\varepsilon) = \mathcal{P}/(x'-x) + i\pi\delta(x'-x)$, where $\mathcal{P}$ is the symbol of the principal value. Due to the fact that the relation $s = s^0 \sim k^2$ applies to the expression figuring under the integral of (5), the integral terms can be neglected and

$$A_1(s_1 s_2 s_3) = A_1(s_1^0 s_2^0 s_3^0) + i[\sigma_1(s_1) + \sigma_2(s_2) + \sigma_3(s_3)].$$

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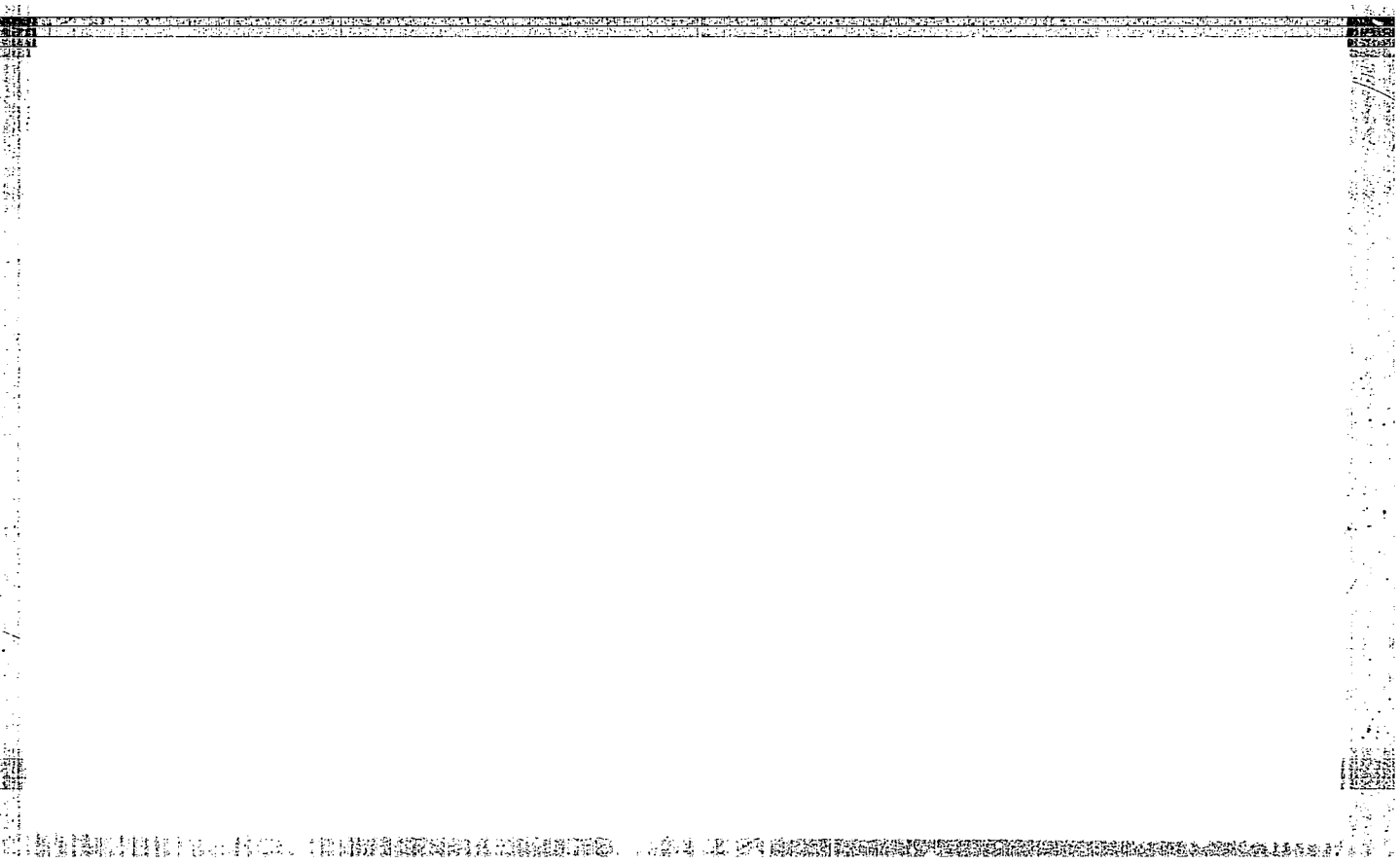
is obtained. Similar expressions can also be obtained for the reactions (2) and (3). (7) not only determines the amount of matrix elements but also their phase. The expression (4) leads automatically to correct expressions for the matrix elements with an accuracy up to the terms of second order of the relative moments. The authors thank A. A. Logunov and L. D. Solov'yev for discussions. There are 1 figure and 2 non-Soviet-bloc references.

ASSOCIATION: Matematicheskiy institut im. V. A. Steklova Akademii nauk SSSR (Institute of Mathematics imeni V. A. Steklov Academy of Sciences USSR)

PRESENTED: February 28, 1961, by N. N. Bogolyubov, Academician

SUBMITTED: February 23, 1961

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964020003-6"



APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964020003-6"

ZAV'YALOV, O.I.

High-energy asymptotic behavior of converging Feynman diagrams. Zhur. eksp. i teor. fiz. 47 no.3:1099-1107 S '64. (MIRA 17:11)

1. Matematicheskiy institut AN SSSR.

ZAV'YALOV, O.I.; POLIVANOV, M.K.; KHORUZHIY, S.S.

Analytic properties of the amplitude in the quasi-potential scattering problem. Zhur. eksp. i teor. fiz. 45 no.5:1654-1659 N '63. (MIRA 17:1)

1. Matematicheskiy institut AN SSSR.

KARPOV, Yu.A.; GLAVIN, G.G.; ZAV'YALOV, O.V.; IVANOVA, R.V.

Evaluation of the sensitivity of oxygen detection in niobium by the vacuum melting method. Zav.lab. 31 no.10:1190-1191 '65. (MIRA 19:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti.

ZAV'YALOV, P.

Eliminate shortcomings more rapidly. Pozh.delo 5 no.1:6-7 Ja '59. (MIRA 11:12)

1. Nachal'nik Upravleniya pozharnoy okhrany Kazakhskoy SSR.
(Kazakhstan--Fire prevention)

ZAV'YALOV, P.

These problems must be solved. Pozh. delo 4 no.1:12-13 Ja '58. (MIRA 11:1)

1. Nachal'nik Upravleniya pozharnoy okhrany Kazakhskoy SSR.
(Kazakhstan--Fire prevention)

ZAV'YALOV, P.V.; PERFIL'YEVA, Ye.M.

Tumors of the carotid gland. Stomatologiia 40 no.2:91-92 Mr-Ap '61. (MIRA 14:5)

1. Iz otolaringo-stomatologicheskogo otdeleniya (zav. Ye.I.Shelkov) Barnauk'skoy gorodskoy bol'nitsy (glavnyy vrach - zasluzhennyy vrach RSFSR R.I. Vas'kova).

(CAROTID BODY--TUMORS)

BORYCHEV, Nikolay Ivanovich; ZAV'YALOV, Pavel Fedorovich; DUBROVSKIY, N.D., otv.red.; OSVAL'D, E.Ya., red.izd-va; BEREZLAVSKAYA, L.Sh., tekhn.red.

[Work and relaxation of miners in the U.S.S.R.] Trud i otdykh shakhterov v SSSR. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 53 p. (MIRA 13:12)
(Miners) (Hours of labor)

GURZHIY, Petr Kondrat'yevich; ZAV'YALOV, P.F., otv.red.; VINOGRADOVA, G.V., red.izd-va; IL'INSKAYA, G.M., tekhn.red.

[Instruction for a stope miner in flat and inclined deposits] Pamiatka gornorabochego ochistnogo zaboia na pologikh i naklonnykh plastakh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1959. 133 p. (MIRA 14:2)

(Stoping (Mining))

BORYCHEV, N.I.; ZAV'YALOV, P.F.; DVORNIKOV, I.S., retsenzent; ZHELEZNOV, B.I., retsenzent; POKROVSKAYA, I.M., red.izd-va; PROZOROVSKAYA, V.L., tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Handbook on labor safety in coal mines] Okhrana truda na ugol'nykh shakhtakh; spravochnoe posobie. Izd.2., perer. i dop. Moskva, Gosgortekhizdat, 1963. 427 p. (MIRA 16:7)

1. Profsoyuz rabochikh ugol'noy promyshlennosti. TSentral'nyy komitet. 2. Otdel okhrany truda TSentral'nogo komiteta profsoyuza rabochikh ugol'noy promyshlennosti (for Borychev, Zav'yalov).
(Coal mines and mining--Safety measures)

ZAV'YALOV, P.S.

Specialization in the tractor industry abroad. Trakt. i sel'khozmash. no.11:46-48 N '64. (MIRA 18:1)

DROZDOV, L.N.; ZAV'YALOV, P.F.; FIDELEV, A.A.; BORYCHEV, N.I., red.; GOLUBYATNIKOVA, G.S., red.izd-va; BOLDYREVA, Z.A., tekhn.red.

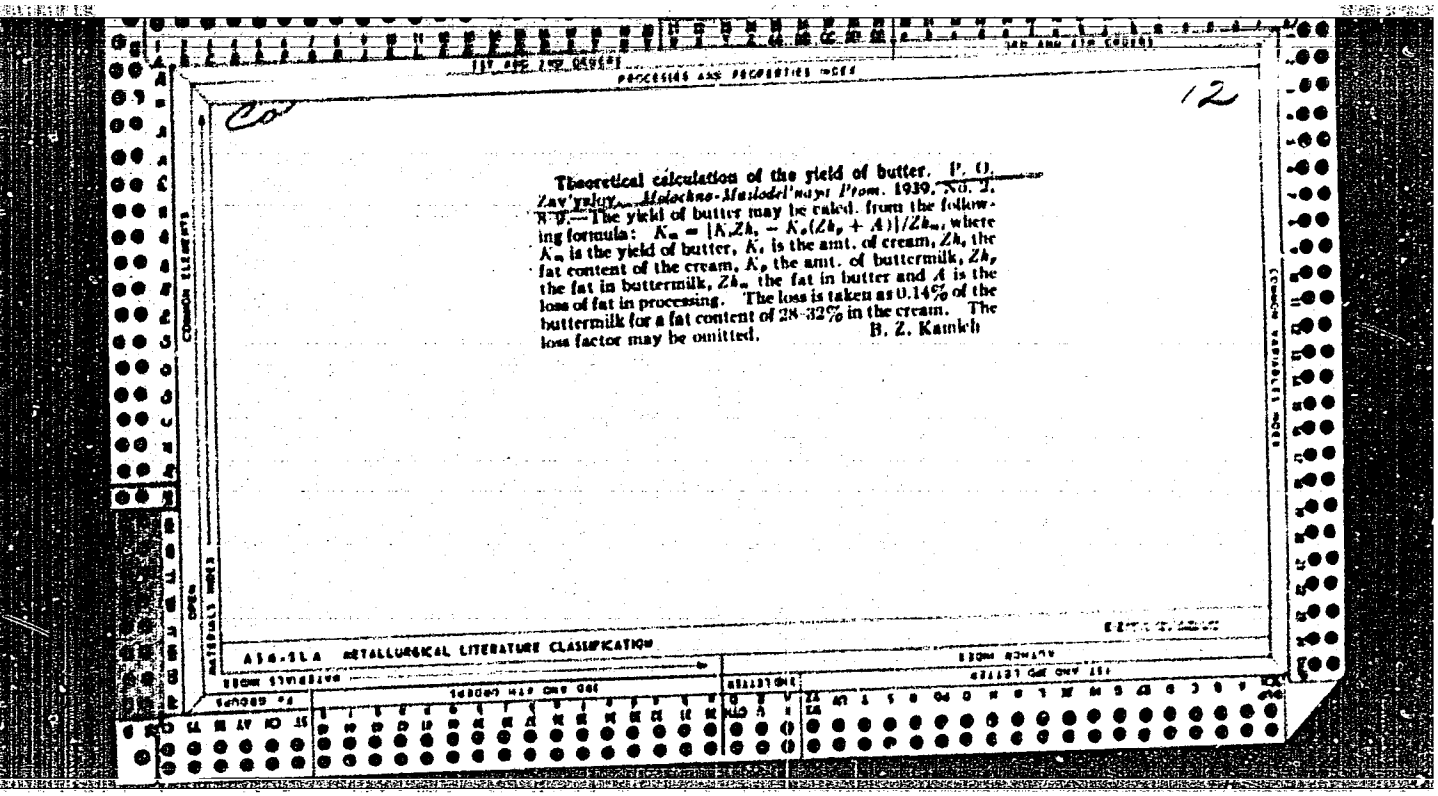
[Work clothes for workers and employees in the enterprises of the coal and the slate industries]Spetsodezhda dlia rabochikh i sluzhashchikh predpriiatii ugol'noi i slantsevoi promyshlennosti. Moskva, Gosgortekhizdat, 1963. 331 p. (MIRA 16:3)

1. Profsoyuz rabochikh ugol'noy promyshlennosti. TSentral'nyy komitet.
(Coal mines and mining) (Work clothes) (Slate)

BORYCHEV, N.I.; ZAV'YALOV, P.F.; KOMOGORTSEV, N.I., otv.red.; OSVAL'D, E.Ya., red.izd-va; KONDRAT'YEVA, M.A., tekhn.red.

[Handbook on work safety in coal mining] Spravochnik po okhrane truda v ugol'noi promyshlennosti. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1960. 302 p. (MIRA 13:7)

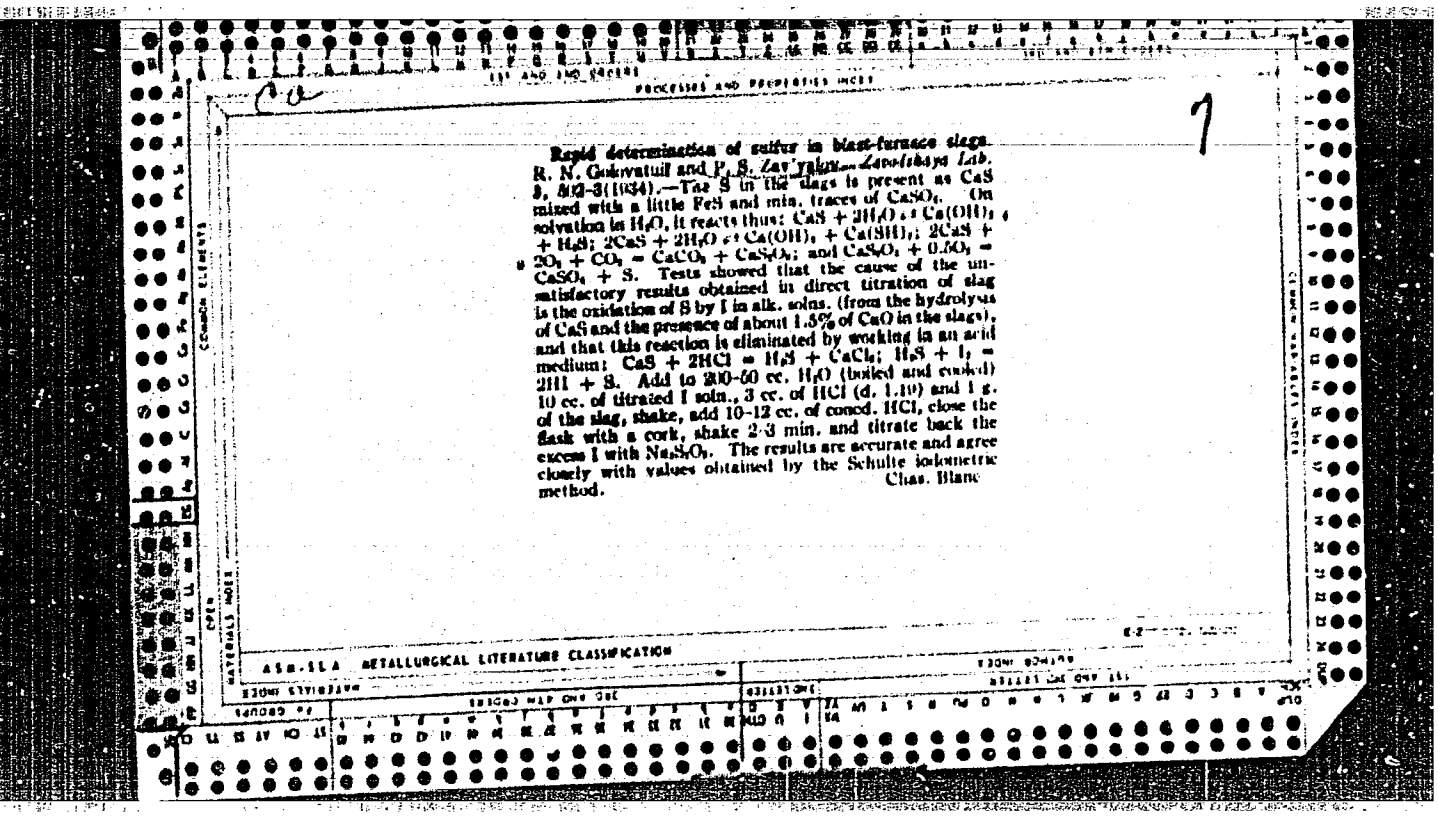
1. Soyuz rabochikh ugol'noy promyshlennosti. TSentral'nyy komitet. 2. Otdel okhrany truda TSentral'nogo komiteta profsoyuza ugol'noy promyshlennosti (for Borychev, Zav'yalov).
(Coal mines and mining--Safety measures) (Coal miners)



12

Theoretical calculation of the yield of butter. P. O. Zav'yalov. *Molochno-Maslodel'naya Prom.* 1939, No. 2, 8-9.—The yield of butter may be calcd. from the following formula: $K_m = [K_c Zk_c - K_s(Zk_s + A)]/Zk_m$, where K_m is the yield of butter, K_c is the amt. of cream, Zk_c the fat content of the cream, K_s the amt. of buttermilk, Zk_s the fat in buttermilk, Zk_m the fat in butter and A is the loss of fat in processing. The loss is taken as 0.14% of the buttermilk for a fat content of 28–32% in the cream. The loss factor may be omitted. B. Z. Kaiukh

A56-51A METALLURGICAL LITERATURE CLASSIFICATION



Rapid determination of sulfur in blast-furnace slags. R. N. Gukvatuil and P. S. Zav'yalov. *Zavodskaya Lab.* 3, 812-3 (1934).—The S in the slags is present as CaS mixed with a little FeS and min. traces of $CaSO_4$. On solvation in H_2O, it reacts thus: $CaS + 2H_2O = Ca(OH)_2 + H_2S$; $2CaS + 2H_2O = Ca(OH)_2 + Ca(SH)_2$; $2CaS + 2O_2 + CO_2 = CaCO_3 + CaS_2O_3$; and $CaS_2O_3 + 0.5O_2 = CaSO_4 + S$. Tests showed that the cause of the unsatisfactory results obtained in direct titration of slag is the oxidation of S by I in alk. solns. (from the hydrolysis of CaS and the presence of about 1.5% of CaO in the slags), and that this reaction is eliminated by working in an acid medium: $CaS + 2HCl = H_2S + CaCl_2$; $H_2S + I_2 = 2HI + S$. Add to 200-50 cc. H_2O (boiled and cooled) 10 cc. of titrated I soln., 3 cc. of HCl (d. 1.19) and 1 g. of the slag, shake, add 10-12 cc. of concd. HCl, close the flask with a cork, shake 2-3 min. and titrate back the excess I with $Na_2S_2O_3$. The results are accurate and agree closely with values obtained by the Schulte iodometric method.

Chas. Blanc

ALEKSAPOL'SKIY, D.Ya., kand. tekhn. nauk; PARSHCHIK, S.A., kand. tekhn. nauk; ZAV'YALOV, P.S., inzh.

Aerodynamic universal stand for investigating the models of hydraulic torque converters and elements of their flow area. Gidr. mash. i gidr. no.1:213-215 '65. (MIRA 18:12)

1. Khar'kovskiy politekhnicheskiy institut.

PARSHCHIK, S.A., kand. tekhn. nauk; ZAV'YALOV, P.S., inzh.

Effect of the speed of a pump runner and viscosity of the working fluid on the energy indices of a hydraulic torque convertor. Gidr. mash. i gidr. no.1:216-219 '65.

(MIRA 18:12)

1. Khar'kovskiy politekhnicheskiy institut.

ZAV'YALOV, P.V.

Amyloidosis and extensive skin defects in children. Pediatriia 42 no.3:54-56 Mr'63 (MIRA 17:2)

1. Iz kafedry detskoy khirurgii (zav. K.I. Chulovskiy) Omskogo meditsinskogo instituta i kafedry detskoy khirurgii Leningradskogo pediatricheskogo meditsinskogo instituta.

ZAV'YALOV, P.V., kand.med.nauk

Prevention of cicatrical contractures following burns in children. Vest.khir. no.5:116-117 '62. (MIRA 15:11)

1. Iz kafedry detskoy khirurgii (i.o. zav. - dotsent G.V. Chistovich) Leningradskogo pediatricheskogo meditsinskogo instituta.

(BURNS AND SCALDS) (CONTRACTURE)

ZAV'YALOV, P.V., kand.med.nauk

Granulating wounds and their treatment by Piasecki's method. (MIRA 15:5)
Khirurgiia no.8:79-82 Ag '61.

1. Iz kafedry detskoy khirurgii (i. o. zav. - dotsent O.V. Chistovich) Leningradskogo pediatricheskogo meditsinskogo instituta.

(SKIN GRAFTING)

ZAV'YALOV, P. V., kand. med. nauk; SHELKOV, Ye. I.

Goiter of the root of the tongue. Vest. otorin. no.3:76-78 '61.
(MIRA 14:12)

1. Iz Otorinolaringologicheskogo stomatologicheskogo otdeleniya (zav. Ye. I. Shelkov) Barnaul'skoy gorodskoy bol'nitsy.

(TONGUE—DISEASES) (GOITER)

ZAV'YALOV, P.V.

Free skin transplantation to granulating wounds of supporting surfaces in children. Ortop., travm. i protez. 21 no.11:73-75 '60. (MIRA 14:4)

(SKIN GRAFTING) (FOOT--SURGERY)

ZAV'YALOV, P.V., kand.med.nauk

Cytological and bacteriological study of granulating wounds. Sov. med. 25 no.10:49-53 O '61. (MIRA 15:1)

1. Iz kafedry detskoy khirurgii (ispolnyayushchiy obyazannosti zaveduyushchego - dotsent G.V.Chistovich) Leningradskogo pediatricheskogo meditsinskogo instituta (dir. - prof. N.T.Shutova).
(WOUNDS)

ZAV'YALOV, P.V., kand.med.nauk

History of dermatoplasty in Russia. Sov.med. 25 no.12:140-141 D '61.
(MIRA 15:2)

1. Iz kafedry detskoy khirurgii (ispolnyayushchiy obyazannosti zaveduyushchego - dotsent G.V.Chistovich) Leningradskogo pediatricheskogo meditsinskogo instituta (dir. - prof. N.T.Shutova).
(SKIN--TRANSPLANTATION)

ZAV'YALOV, P. V., Cand Med Sci -- (diss) "Plastic surgery of granulating wounds in children according to the P. Ya. Pyasetskiy method." Len, 1958. 23 pp with ills (Len Pediatric Med Inst), 200 copies (KL, 35-58, 110)

ZAV'YALOV, P.V., aspirant [Leningrad, Borodinskaya ul. d.1, kv.56)

P.IA.Piasetskii's skin grafting technic. Vest.khir. 79 no.12:120 D '57. (MIRA 11:1)

1. Iz kafedry detskoy khirurgii (av. - prof. A.V.Shatskiy) Leningradskogo pediatricheskogo meditsinskogo instituta.
(SKIN GRAFTING)

ZAV'YALOV, S.

Radio dispatched taxicabs. Avt.transp. 38 no.8:11 Ag '60. (MIRA 13:8)

1. Nachal'nik tekhnicheskogo otdela 1-go taksomotornogo parka Moskvy.
(Moscow--Taxicabs--Radio control)

ZAV'IALOV, S.

The history of the Izhora factory. Pod redaktsiei B. P. Pozerna, O. S. Zaidelia, M. P. Baklaikina. t. 1- Moskva, Gos. Izdat. Istoriia zavodov, 1934- (Istoriia zavodov, kn 1) At head of title: S. Zav'ialov.

ZAV'YALOV, S., inzh.

Immediate problems in automotive transportation. Avt. transp. 38 no. 5:25-26 My '60. (MIRA 14:2)
(Motor vehicles—Maintenance and repair)

ZAV'YALOV, S., inzh.

Achieved by innovators. Avt.transp. 40 no.1:49-50 Ja '62.
(MIRA 15:1)
(Taxicabs--Maintenance and repair)

ZAV'YALOV, S., inzh.

Constant attention to inventors and innovators. Avt.transp. 41 no.11:4-6 N '63. (MIRA 16:12)

ZAV'YALOV, S.

Radiocontrolled "Volga." Prof.-tekh. obr. 18 no.7:32 Jl '61.
(MIRA 14:7)

(Automobiles--Radio control)

ZAV'YALOV, S.

Schools of Estonia report. Prof.-tekh. obr. 18 no.10:22-23 O '61.
(MIRA 14:11)
(Estonia--Vocational education)
(Socialist competition)

BORSKIY, B., inzh; ZAV'YALOV, S., inzh.

Conveyor with an automatic control drive. Avt.transp. 41 no.1: 18-20 Ja '63. (MIRA 16:2)

(Conveying machinery)

ZAV'YALOV, S.

27-6-15/29

AUTHOR: Zav'yalov, S., Chief of Educational-Methodical Section, Labor Reserve Administration of Estonia

TITLE: Instructors' Conference (Pouchitel'naya Konferentsiya)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, 1957, Nr. 6(145) p 21 (USSR)

ABSTRACT: To promote the instruction of new technics, the Pedagogical Collective of the Yarva-Yanin School of Agricultural Mechanization Nr. 6 works in close contact with the respective enterprizes and the Scientific Auto mobile and Tractor Research Institute (NATI - Nauchno-issledovatel'ski avtotraktorski institut) which supplies instruction material. For this same purpose a conference is held after each training period. The article describes such a conference devoted to the study of tractors "ДТ-14" and "ДТ-24" built by the Tractor Works at Vladimir and Kharkov. P.M. Teptelev, in charge of the engine section of the designing office of the Vladimir Tractor Works, one of the designers of Diesel engine "Д-24" and K.Ya. Kikas informed the conference of designs for new tractors. The conference was attended by V.A. Merits in charge of the Chair of Mechanization of the Estonian

Card 1/2

27-6-15/29

Instructors' Conference

Agricultural Academy and A. V. Smirnov, Chief of the Mechanization Administration of Ministry of Agriculture, Estonian SSR.

AVAILABLE: Library of Congress

Card 2/2

ZAV'YALOV, S. A.

School Excursions

Excursion to an agricultural mechanization school. Est. v shkole No. 2, 1953.

Monthly List of Russian Accessions, Library of Congress
June 1953. UNCL.

KAVARETSKIY, K.V.; ZAV'YALOV, B.A. (Sochi)

Experience in the treatment of lumbosacral radiculitis with Matsesta hydrogen sulfide baths of high concentration. Vop. kur., fizioter. i lech. fiz. kul't 30 no.5:441-444 S-O '65. (MIRA 18:12)

ZAV'YALOV, B.F.

Determining the quantity of drilling fluid depending on the r.p.m. of the rotor bit and its structural features. Neft. khoz. 40 no.5:15-17 My '62. (MIRA 18:6)

ZAV'YALOV, S.

Together with the Communist Youth League. Prof.-tekh. obr. 21 no.9:10 S '64. (MIRA 17:11)

ZAV'YALOV, S.

Motortruck for the transportation of radioactive substances.
Avt. transp. 43 no.4:43-44 Ap '65. (MIRA 18:5)

BESPALOV, P., inzh.; ZAV'YALOV, S., inzh.; NOVIKOV, Ye., inzh.; TELESHEV, A., inzh.

Equipment for washing and drying motorbuses and motortrucks.
Avt. transp. [illegible]

CA

1c

Pilocarpine alkaloids. XXI. New synthesis of pilosinine. N. A. Dryamova, S. I. Zav'yalov, and N. A. Preobrazhenskii. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 18, 1733-6(1948); cf. *C.A.* 42, 2567*f*.—EtONa (from 15 g. Na) in 300 ml. abs. EtOH is treated at −10° with stirring with 65 g. EtO_2CCH_2Cl, let stand 12 hrs., filtered, and distd., giving 60.2% Et ethoxyacetate, b. 154-6°. This with EtOAc in the presence of Na gave 21% *Et γ-ethoxyacetoacetate*, b_{10} 100-3°, n_D^{20} 1.4310, d_4^{20} 1.0421. To 6.5 g. of this ester, 0.8 g. Na, and 80 ml. Et_2O at −15° was slowly added 3 g. $CO.O.CH_2.CH:CH$ (prepd. according to Glattfeld, *et al.*, *C.A.* 25, 4850) in 20 ml. Et_2O, the mixt. slightly acidified by HCl with ice cooling after 20 hrs., the org. layer combined with the Et_2O ext. of the aq. layer, and the soln. washed with $NaHCO_3$, dried, and distd., giving *Et α-ethoxyacetylhomopilosinate*, $EtOCH_2COCH(CO_2Et)CH.CH_2.O.CO.CH_2$, b_2 182-4°, n_D^{20} 1.4880, d_4^{20} 1.2171; the yield rises to 34.7% if the reaction is done in Me_2CO for 20 hrs. The ester (2 g.) in 80 ml. 1:3 HCl refluxed 15 hrs. and concd. *in vacuo* gave 86% *ethoxymethyl homopilosinyl ketone*, b_2 171-3°, which (3 g.) heated 2 hrs. to 100° with 15 ml. 10% HBr in AcOH, followed by evapn. *in vacuo*, gave 34% $BrCH_2COCH_2CH.CH_2.O.CO.CH_2$, b_2 180-4°. With K phthalimide it gave the phthalimide deriv. identical with that described by Polyakova, *et al.* (*C.A.* 34, 1050[5]).

G. M. Kosolapoff

METALLURGICAL LITERATURE CLASSIFICATION

ZAV'YALOV, S. I.

Sep 48

USSR/Chemistry - Synthesis
Chemistry - Alkaloids

"Pilocarpine Alkaloids: XXI, New Synthesis of Alkaloid Pilosinine," N. A. Dryamova, S. I. Zav'yalov, N. A. Preobrazhenskiy, Moscow Inst Fine Chem Tech imeni M. V. Lomonosov, 2 3/4 pp

"Zhur Obshch Khimii" Vol XVIII, No 9

Describes new synthesis of phthalimidmethyl-homopilosinyl ketone, starting with α, β-butenolide and γ-ethoxy-[illegible] ether. Submitted [illegible]

30/49T12

ZAV'YALOV, S. I. Cand Chem Sci

Dissertation: "Derivatives of Crotonic Acid in Syntheses of Gamma-Lactones." 19/6/50

Moscow Inst of Fine Chemical Technology imeni M. V. Lomonosov

SO Vecheryaya Moskva
Sum 71

USSR/Chemistry - Alkaloids Jan 52

"The Configuration of Pilocarpine," C. I. Zavyyalov, Inst Org Chem, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXXII, No 2, pp 257-260

While a complete synthesis of pilocarpine had been carried out in 1936 by N. A. Preobrazhenskiy et al., the stereochem configuration was not clarified. Addn of HBr to pilopic acid and its stereoisomer gave the alpha and beta disubstituted succinic acids. Comparison of properties with known alpha beta disubstituted succinic acids indicates that the bromoacid derived from pilopic acid belongs to the cis- 202T28

USSR/Chemistry - Alkaloids (Contd) Jan 52

group, while the bromoacid obtained from isopilopic acid belongs to the trans- group. The facility of the change of pilocarpine into its diastereoisomer attests to its cis- structure. Homoisopilopic acid can be changed into homopilopic acid according to a procedure shown, which forms subject of a 1948 USSR author's certificate. Thus, it is established that pilocarpine has the cis- configuration and its diastereoisomer had the trans- configuration.

202T28

ZAVYYALOV, C. I.

ZAV'YALOV, S. I., NAZAROV, I. N.

Condensation Products (Chemistry)

Acetylene derivatives. No. 127. Synthesis of polycyclic compounds related to steriods. Structure of products of condensation of 2-methoxydivinyl with 1-methyl-cyclohexene-6-one and methyl methacrylate. Part 15. Izv. AN SSSR. Otd. khim. nauk no. 4, July-Aug. 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

ZAV'YALOV, S. I.

USSR/Chemistry - Steroids May/Jun 52

"Synthesis of Polycyclic Compounds Related to Steroids, XIII. The Reaction of Carbocyclic Ketones With 1-Acetylcyclohexene," I. N. Nazarov, S. I. Zav'yalov, Inst of Org Chem, Acad Sci USSR

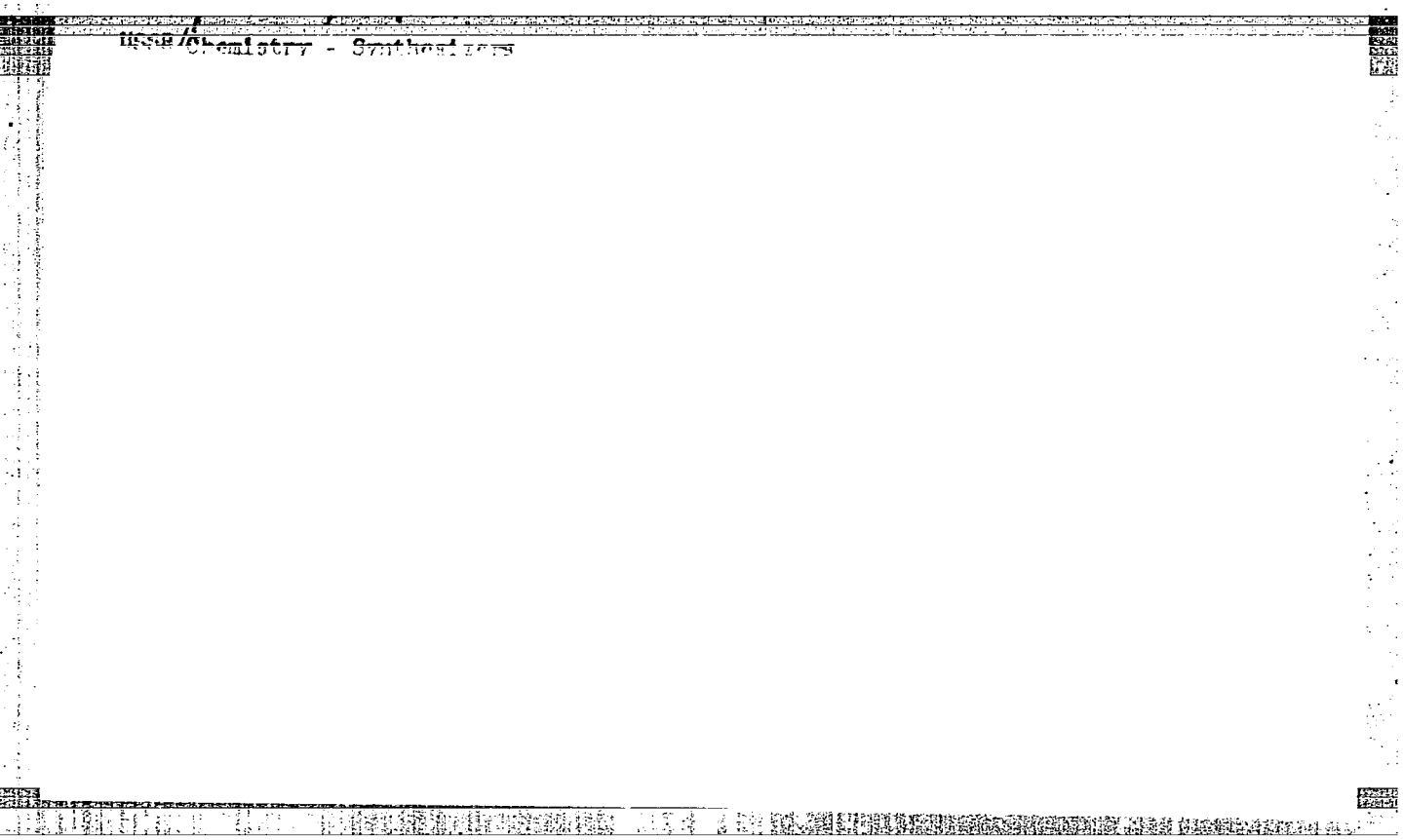
"Iz Ak Nauk, Otdel Khim Nauk" No 3, pp 437-441

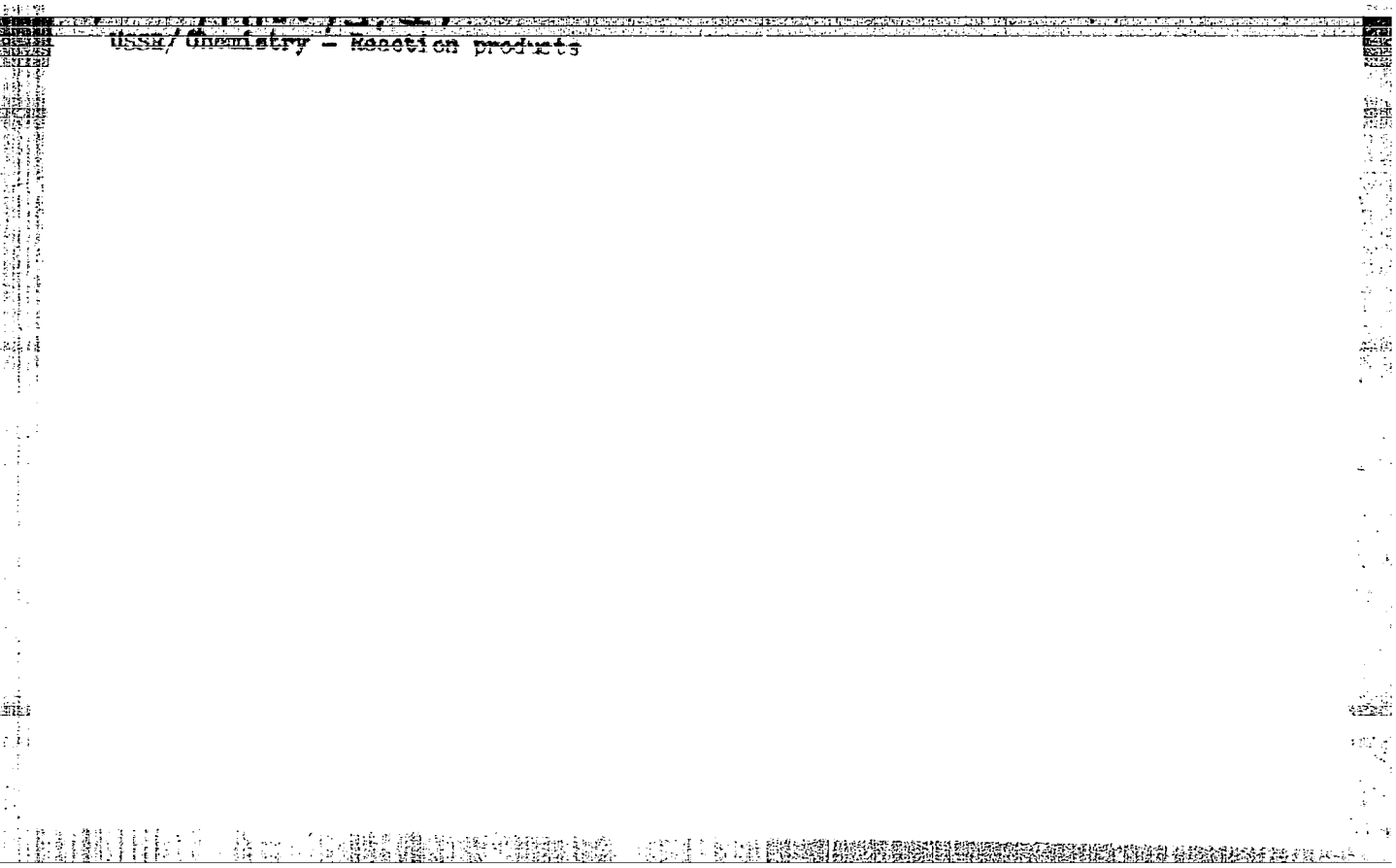
α-Decalone, 9-methyl-1-octanol, and 3, 8-dimethyltetrahydrocyano-1-one were condensed with 1-acetylcyclohexene. Polycyclic diketones were obtained, which were not subjected to further intramol crotonic condensation.

220T7

NAZAROV, I.N.; ZAV'YALOV, S.I.

Acetylene derivatives. CXXVII. Synthesis of polycyclic compounds related to steroids. 15. Structure of products of condensation of 2-methoxy-1,3-butadiene with 2-methyl-2-cyclohexen-1-one and methyl methacrylate. Izvest. Akad. Nauk S.S.S.R., Otdel Khim. Nauk '52, 703-9. (MLRA 5:9)
(CA 47 no.20:10515 '53)





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ZAV'YALOV, S. I.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

Synthesis of polycyclic compounds related to steroids. XI Stereochemistry of cyclic compounds. I. Condensation of bivinyl with citraconic and mesaconic acid and their esters. Cis-trans isomerism of 1-methylcyclohexane-1,2-dicarboxylic acids and their esters. I. N. Nazarov and V. F. Kucherov. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1952, 301-7 (Engl. translation).—See *C.A.* 47, 5363c. XII. Condensation of cyclic β-diketones with vinyl ketones and the transformation of the products. I. N. Nazarov and S. I. Zav'yalov. *Ibid.* 309-18.—See *C.A.* 47, 5364b.

H. L. H.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

Acetylene derivatives. CXXVI. Synthesis of polycyclic compounds related to steroids. 14. Synthesis of tetracyclic ketones with a methylcyclopentane B ring. I. N. Nazarov, V. P. Kucherov, and L. N. Terekhova. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1952, 427–35 (Engl. translation).—See *C.A.* 47, 5306c. CXXVII. Synthesis of polycyclic compounds related to steroids. 15. Structure of products of condensation of 2-methoxy-1,3-butadiene with 2-methyl-2-cyclohexen-1-one and methyl methacrylate. I. N. Nazarov and S. I. Zavyalov. *Ibid* 643–7. See *C.A.* 47, 10015d. CXXVIII. Heterocyclic compounds. 2. Action of primary aromatic amines and 2-aminopyridine on vinyl allyl ketones. Synthesis of aryl substituted 4-piperidones and 1-(2-pyridyl)-4-piperidones. I. N. Nazarov, S. G. Matsoyan, and V. A. Rudenko. *Ibid.* 923–32. See *C.A.* 48, 1357d. CXXIX. Heterocyclic compounds. 24. Transformations of 1-phenyl-2,5-dimethyl-4-piperidone. *Ibid.* 933–7.—See *C.A.* 48, 1358e.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964020003-6"

ZAV'YALOV, S. I.

USSR/Organic Chemistry - Theoretical and General Questions on Organic Chemistry, E-1

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61402

Author: Nazarov, I. N., Zav'yalov, S. I., Burmistrova, M. S.

Institution: None

Title: On the Influence of Enolization on the Capability of β-Dicarbonyl Compounds of Undergoing Michael's Reaction and C-Alkylation

Original Periodical: Izv. AN SSSR, otd. khim. n., 1956, No 2, 205-212

Abstract: For the purpose of studying the dual reactivity of β-diketones in reactions of nucleophilic substitution an investigation was made of the reactions of alkylation and Michael condensation of some cyclic β-diketones. On boiling (3 hours) potassium derivative of 2-methyldihydrcresorcinol (I) (from 0.6 g potassium and 2 g 2-methyl dihydroresorcinol [illegible]) with 1-bromacetyl cyclohexanol-1 (3 g) in CH_3OH (15 ml) was produced the enolic ester $CH_2(CH_2)_2COC(CH_3)=COCH_2COC(OH)(CH_2)_4CH_2$ (III) yield 40%, MP 135°-136° (from

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USSR/Organic Chemistry - Theoretical and General Questions on Organic Chemistry, E-1

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61402

Abstract: aqueous CH_3OH). Under the same conditions I and w bromacetophenone yielded C-derivative $CO(CH_3)_2COC(CH_3) - CH_2COC_6H_5$ (IV) yield 44%, MP 125°-126° (from CH_3OH). On shaking with 2% HCl in the cold III is quantitatively hydrolyzed to II; under same conditions IV remains unchanged. On heating with aqueous KOH IV yields keto acid $CH_3CHCH_2C(C_6H_5) = C(CH_2CH_2COOH)C = O$ yield 80%, MP 94°-95° (from water); 2,4-dinitrophenylhydrazone, MP 131°-132° (from CH_3OH). On boiling 3 hours with CH_3I in CH_3OH tetrinic acid which is almost entirely enobic is not methylated while the little enolized 2-methylindandione-1,3 (V) under the same conditions yields the C-methylated derivative with a yield of 70%. In contrast with dihydroresorcinol (VI) V is readily C-methylated in dry dioxane. V reacts more readily in condensation with acrylonitrite than derivatives of VI and α-alkyltetronic acids. In aqueous dioxane in presence of alkali cyclohexanone-2-carboxylic ester (VII) is less readily cyanoethylated than the slightly enolized cyclopentanone-2-carboxylic ester (VIII). The noted instances of lower nucleophilic reactivity in the series of keto-enolic compounds are

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NAZAROV, I.N.; ZAV'YALOV, S.I.

Synthesis of steroids and of substances related to them. Part 37. Synthesis of steroid analogs lacking ring B. Izv.AN SSSR.Otd.khim. nauk no.5:569-574 My '56. (MIRA 9:9)

1.Institut organicheskoy khimii imeni N.D.Zelinskogo Akademii nauk SSSR. (Steroids)

NAZAROV, I.N.; ZAV'YALOV, S.I.; BURMISTROVA, M.S.; GURVICH, I.A.; SHMONINA, L.I.

Synthesis of steroid compounds and related substances. Part 34. 9-methyl-1,6-diketo-Δ^5-octahdronaphthalene. Zhur.ob.khim. 26 no.2:441-444 F '56. (MLRA 9:8)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Naphthalene)

ZAV'YALOV, S.I.

NAZAROV, I.N.; ZAV'YALOV, S.I.

Synthesis of steroid compounds and related substances. Report No.39. Steroid analogs lacking ring B. Izv.AN SSSR. Otd.khim.nauk no.2:207-211 F '57. (MIRA 10:4)

1. Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR.

(Steroids)

ZAV'YALOV, S.I.

NAZAROV, I.N.; ZAV'YALOV, S.I.

Interaction of magnesium-organic compounds with 2-bromodihydroresorcinol. Izv.AN SSSR. Otd. khim. nauk, no.2:200-203 F '58. (MIRA 11:4)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Resorcinol) (Grignard reagents)

Zavyalov, S.F.

AUTHORS: Nazarov, I. N., Zav'yalov, S. I. 62-2-11/28

TITLE: The Interaction of Organomagnesium Compounds With 2-Bromodihydroresorcin (Vzaimodeystviye magniyorganicheskikh soyedineniy s 2-bromdigidrorezortsinom).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 2, pp. 200-203 (USSR).

ABSTRACT: It is well-known that in the bromination of dihydroresorcin in a chloroform solution a dibromo-derivative (references 1,2,3) forms which splits off the molecule of the bromine hydrogent after short boiling with water, on which occasion it is converted to 2-bromodihydroresorcin (reference 4). It was found that the bromination of dihydroresorcin can also take place in an aqueous solvent with a 50% yield. The halide atom of 2-bromodihydroresorcin differs from other α-bromine ketones by its low mobility and nucleophile reactions. Data exist in publications that dihydroresorcin enters into reactions according to Grignard (Grinyar) with a simultaneous formation of a mixture of unsaturated ketones and dienes. See scheme. It became evident that in contrast to dihydroresorcin 2-bromodihydroresorcin reacts highly selectively with

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organomagnesium compounds. Under the influence of magnesium--methyl-iodide or magnesium-methyl-bromide at first magnesium--enolates develop which form dimagnesium derivatives with the excess of the Grignard reagent. Nondistilled bromine ketones form the characteristic light-red 2,4-dinitrophenylhydrazones. By distillation in vacuum (20-30 mm) bromine ketones lose bromine-hydrogen and are converted to meta-derivatives of phenols. A partial splitting off of bromine-hydrogen can even be observed in the distillation of the bromine ketones (in vacuum 2 mm) at a temperature of 130-140° C. In an analytically purs state the authors only obtained 2- ethyl-1-bromo-Δ--cyclohexenone-6 (see formulae p. 206). It is important that the halogen-atoms of the bromine ketones of 2-bromodihydroresorcin have chemical properties which are distinctly to be distinguished. On a treatment of bromocyclohexenones (references 10 and 11) by means of diluted alkali cyclic α-diketones form (references 16 and 17). There are 6 references.

ASSOCIATION: Institute for Organic Chemistry AN USSR imeni N.D. Zelinskiy (Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR).

The Interaction of Organomagnesium Compounds With 2-Bromo-dihydroresorcin. 62-2-11/28

SUBMITTED: September 12, 1956

AVAILABLE: Library of Congress

1. Organomagnesium compounds-Chemical reactions 2. Dihydroresorcin-Bromination 3. 2-Bromodihydroresorcin-Chemical reactions

Card 3/3

AUTHORS: Nazarov, I. N., Zav'yalov, S. I. SOV/62-58-10-12/25

TITLE: Synthesis of Steroid Compounds and of Substances Related to Them (Sintez steroidnykh soyedineniy i rodstvennykh im veshchestv) Communication 40: Synthesis of Steroid Analogs Containing No B or C Nucleus (Soobshcheniye 40: Sintez steroidnykh analogov, ne soderzhashchikh kol'tsa B ili C)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 10, pp 1233 - 1238 (USSR)

ABSTRACT: In earlier papers the authors described the synthesis of a number of aromatic compounds which according to their structure are related to estrone and the doisinol acid. Continuing this work the authors describe in the present paper the synthesis of some similar model steroids containing no B and C nuclei and therefore belong to the naphthalene and biphenyl derivatives. After the interaction of 2-magnesium-bromo-6-methoxy naphthalene with the methyl ether of dihydro resorcin an unsaturated bicyclic ketone was obtained in a yield of 7%, from which a model analogue of the homoequilenin is obtained. The reaction of p-magnesium bromanisole

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with the methyl ether of dihydro resorcin lead to the formation of 2-(p-methoxy phenyl)-Δ^1-cyclo hexene-6-on in a yield of 40%. The 6-(p-oxy-o-methyl phenyl)-tetralon-1 was obtained by the dimethylation of 6(p-methoxy-o-methyl phenyl)-tetralon-1 by aluminum chloride in boiling xylol. On its boiling with acetic anhydride its conversion from 6-(p-oxy-phenyl)-tetralon-1 into 6-(p-acetoxy-phenyl)tetralon-1 took place. The corresponding tricyclic ketones which in the cyclization by polyphosphoric acid and a subsequent dehydration with palladium on carbon yield 1-methoxychrysene and 1,8-dimethoxy chrysene, were obtained by the action of the potassium derivative of 5-methoxy tetralon-2 on 2-phenyl-1-bromo ethane and 2-(m-methoxy phenyl)-1-bromo ethane. There are 14 references, 4 of which are Soviet.

Synthesis of Steroid Compounds and of Substances Related to Them. Communication 40: Synthesis of Steroid Analogs Containing No B or C Nucleus

SOV/62-58-10-12/25

ASSOCIATION: Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N.D. Zelinskiy AS USSR)

SUBMITTED: February 28, 1957

Card 3/3

5(3) SOV/62-59-2-31/40

AUTHORS: Gunar, V. I., Zav'yalov, S. I., Krotov, A. I.

TITLE: Synthesis and Anthelmintic Effect of Dehydroresorcinol Derivatives With Branched Aliphatic Chains (Sintez i antigel'mintnoye deystviye proizvodnykh digidrorezortsina, soderzhashchikh razvetvlennyye alifaticheskiye tsepi)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1959, Nr 2, p 358 (USSR)

ABSTRACT: The authors found that dehydroresorcinol can be alkylated with branched allyl bromides described in reference 1 in an ~ 50% yield. In this way the following compounds were synthesized: 2-(3',7'-dimethyl-$\Delta^{2'}$-octenyl)-dehydroresorcinol, 2-(3',7'-dimethyl-$\Delta^{2',6'}$-octadienyl)-dehydroresorcinol and 2-(3',7',11'-trimethyl-$\Delta^{2'}$-dodecylenyl)-dehydroresorcinol. On boiling with acetic anhydride these ketones yielded corresponding enol acetates in large yield. All compounds are anthelmintics. The 2-(3',7',11'-trimethyl-$\Delta^{2'}$-dodecylenyl)-dehydroresorcinol proved to be the most active compound. There is 1 Soviet ref-

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SOV/62-59-2-31/40

Synthesis and Anthelmintic Effect of Dehydroresorcinol Derivatives With Branched Aliphatic Chains

erence.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR) Institut malyarii, meditsinskoy parazitologii i gel'minotologii Minzdrava SSSR (Institute for Malaria, Medical Parasitology and Helminthology of the Ministry of Public Health, USSR)

SUBMITTED: July 10, 1958

Card 2/2

5(3) SOV/62-59-4-16/42

AUTHORS: Nazarov, I. N., Zav'yalov, S. I.

TITLE: Chemistry of Dihydroresorcinol (Khimiya digidrorezortsina). Communication 1. Bromine Derivatives of Dihydroresorcinol and Their Transformations (Soobshcheniye 1. Bromproizvodnyye digidrorezortsina i ikh prevrashcheniya)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 4, pp 668-672 (USSR)

ABSTRACT: The authors have found that dihydroresorcinol can be brominated more conveniently in water, to give 2-bromodihydroresorcinol in a total yield of 60% without liberation of the dibromide (II). The interaction of 2-bromodihydroresorcinol with free bromine or N-bromosuccinimide forms directly 2,2-dibromodihydroresorcinol (VI) in a high yield. When heated to 90-100° in the presence of hydrogen bromide, 2,2-dibromodihydroresorcinol decomposes very violently to liberate hydrogen bromide and form a mixture of resorcinol bromine derivatives (X) and (VII). The pure dibromide (VI) obtained by the bromination of 2-bromodihydroresorcinol with N-bromosuccinimide is much stabler and decomposes only under more severe conditions. The bromination of

Card 1/2

Chemistry of Dihydroresorcinol. Communication 1. Bromine Derivatives of Dihydroresorcinol and Their Transformations

this mixture in water gave 2,4,6-tribromoresorcinol (XI). The reaction of the monomethyl ester of dihydroresorcinol (VIII) with N-bromosuccinimide in carbon tetrachloride forms methoxy bromide (IX), which is identical with the methylation product of 2-bromodihydroresorcinol (III). Methoxybromide (IX) is extremely sensitive to the action of various hydrolyzing agents and saponifies easily under the action not only of acid but also of alkaline aqueous solutions. Bromomethoxyketone (IX) has a fairly good thermal stability and can be distilled under a vacuum at 170-180° without substantial decomposition. It reacts very energetically in the presence of methanol to form the monomethyl ester of resorcinol (XII). There are 8 references, 1 of which is Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: July 17, 1957

5.3610

77075
SOV/62-59-12-19/43

AUTHORS: Zav'yalov, S. I., Medvedeva, V. M.

TITLE: Chemistry of Dihydroresorcinol. Communication 2. Nitrosation of Dihydroresorcinol and Its Derivatives

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1959, Nr 12, pp 2165-2170 (USSR)

ABSTRACT: UV spectra of nitrosation products of dimedon, dihydroresorcinol and acetylacetone in neutral, acid and alkaline alcoholic solutions, as well as UV spectra of trioximes (VIII and IX), methyl ester of dimethylviolanic acid (XI) and its dioxime (XII) were studied.

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Chemistry of Dihydroresorcinol. Communication 2. Nitrosation of Dihydroresorcinol and Its Derivatives

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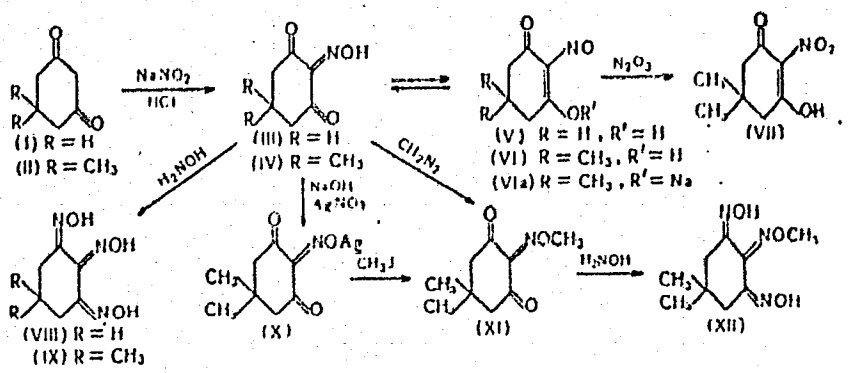
SOV/62-59-12-19/43



It was shown that nitrosation products of dihydroresorcinol, dimedon, and acetylacetone exist in the oxime form (III, IV, XV), but that the sodium derivative of latter has an ionic nitroso (XVI) structure.

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Chemistry of Dihydroresorcinol. Communication 2. Nitrosation of Dihydroresorcinol and Its Derivatives

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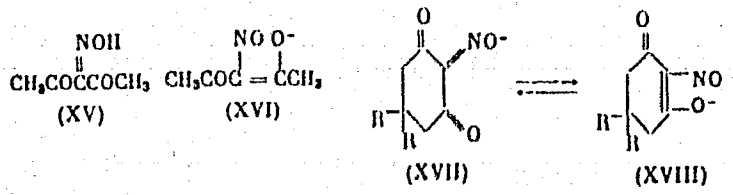
SOV/62-59-12-19/43



2'-Alkyl-2-nitrosodihydroresorcinols (XXI, in 31% yield, mp 161-162° and XXII in 69% yield, mp 147-148 dec.) are obtained by nitrosation of 2-alkyl derivatives of dihydroresorcinol (XIX and XX). Dilute alkali converts (XXI) and (XXII) into ε-alkyl-ε-hydroxyimino-δ-ketocapronic acid (XXIV) in 30% yield, mp 108-109°.

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Chemistry of Dihydroresorcinol. Communication 2. Nitrosation of Dihydroresorcinol and Its Derivatives

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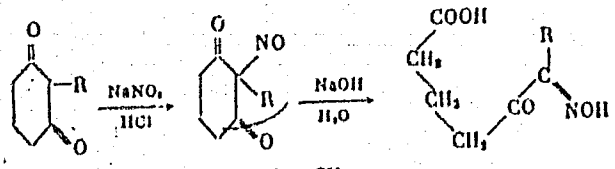
SOV/62-59-12-19/43



(XIX) R = CH₃ (XXI) R = CH₃
(XX) R = C₂H₅ (XXII) R = C₂H₅ (XXIII) R = CH₃
(XXV) R = CH₃CO (XXIV) R = C₂H₅

Yu. P. Egorov took part in this work. There are 3 figures; and 14 references, 3 Soviet, 3 U.S., 2 U.K., 5 German, 1 Japanese. The 5 U.S. and U.K. references are: S. Takaki, Y. Nagase, J. Pharm. Soc. Japan. 58, 430 (1938) - Chem. Abstrs. 32, 6633 (1938); P. Haas, J. Chem. Soc. 91, 1437 (1907); E. C. C. Baly, E. G. Marsden, A. W. Stewart, J. Chem. Soc. 89, 970 (1906); V. Richter, Organic chemistry, v. I, 1944, стр. 406; W. R. Dunstan, E. Goulding, J. Chem. Soc. 79, 630 (1901).

Card 4/5

Chemistry of Dihydroresorcinol. Communication 2. Nitrosation of Dihydroresorcinol and Its Derivatives

77075
SOV/62-59-12-19/43

ASSOCIATION: Zelinskiy Institute of Organic Chemistry, Academy of Sciences, USSR (Institut organicheskoy khimii imeni N. D. Zelinskogo Akademii nauk SSSR)

SUBMITTED: March 31, 1958

Card 5/5

5.3900

77073
SOV/62-59-12-17/43

AUTHORS: Nazarov, I. N., Zav'yalov, S. I.

TITLE: Synthesis of Steroids and Related Compounds. Communication 48. Synthesis of Trans-6-(p-Hydroxyphenyl)-1-Decalone

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 12, pp 2156-2160 (USSR)

ABSTRACT: The Michael condensation of dihydroresorcinol with methyl vinyl ketone forms triketone (I), which is converted into the bicyclic methoxyketone (II) by treatment with diazomethane and subsequent cyclization. Bromomagnesiumanisole reacts with (II) forming tricyclic ketoalcohol (III) which is hydrolyzed with HCl, and by dehydration and isomerization is converted into methoxydienone (VII) (mp 105-106°). Trans-6-(p-hydroxyphenyl)-1-decalone (XIV) was obtained by reduction of (VII). (XIV) has a structure similar to an estrone (XV).

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Synthesis of Steroids and Related Compounds. Communication 48. Synthesis of Trans-6--(p-Hydroxyphenyl)-1-Decalone

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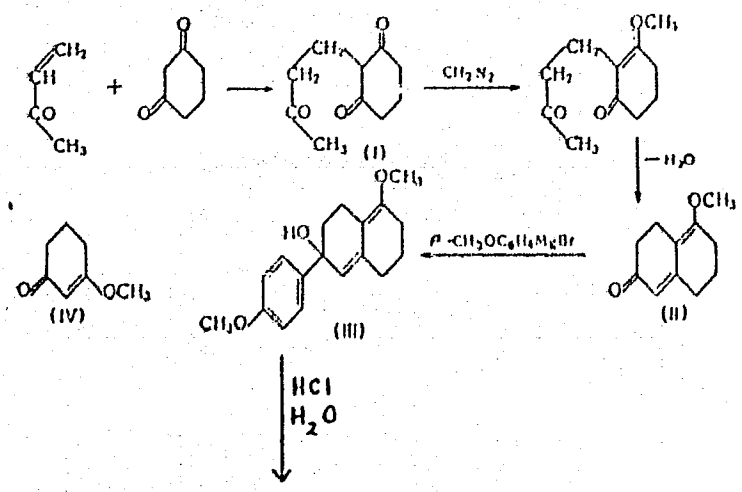
SOV/62-59-12-17/43



Card 2/5

Synthesis of Steroids and Related Compounds. Communication 48. Synthesis of Trans-6-(p-Hydroxyphenyl)-1-Decalone

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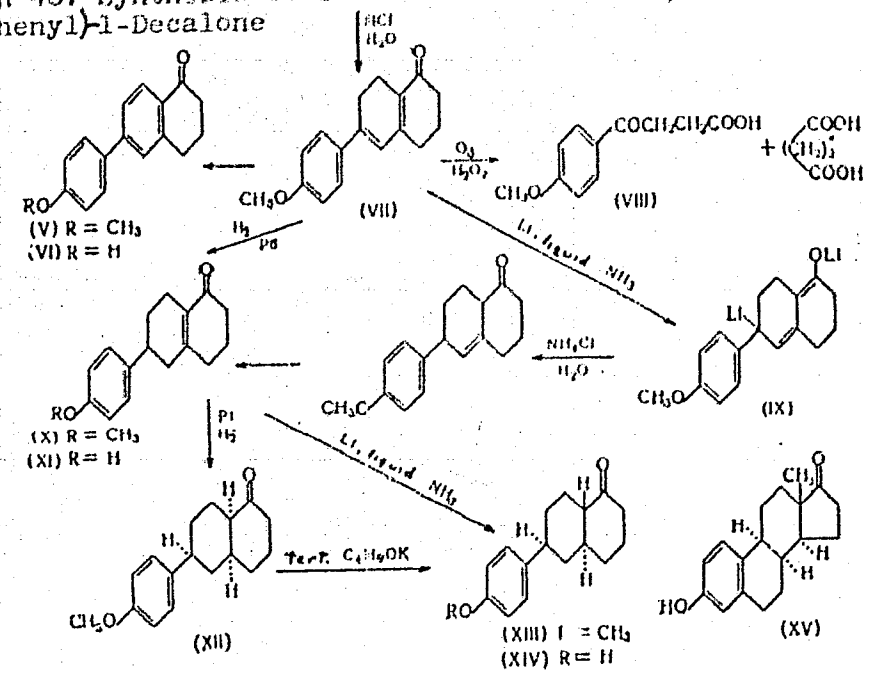
SOV/62-59-12-17/43



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Synthesis of Steroids and Related Compounds. Communication 48. Synthesis of Trans-6--(p-Hydroxyphenyl)-1-Decalone

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SOV/62-59-12-17/43

6-(p-Methoxyphenyl)-$\Delta^{9,10}$-1-octalone (X) was obtained in 32% yield (mp 69-70°) by hydrogenation of (VII) over $Pd/CaCO_3$ in methanol (one mole of H_2 is taken up). The same reaction can be carried out with lithium in liquid ammonia. 6-(p-Hydroxyphenyl)-$\Delta^{9,10}$-1-octalone was prepared in 43% yield (mp 155-156°) by demethylation of (X). Dimethyl sulfate reacts with (XI), in an alkaline medium, forming the starting ketone (X). Hydrogenation of (X) occurs at an appreciable rate only over a Pt catalyst in methanol and in the presence of acetic acid, forming an oily mixture from which cis-decalone (XII) could not be isolated. Trans-6-(p-methoxyphenyl)-1-decalone (XIII) was isolated as a semicarbazone in 18% yield (mp 236-238°) from the above mixture with potassium t-butoxide. (XIII) can be formed from (VII) with uptake of 2 moles of H_2 over Pt catalyst and with subsequent cyclization. Trans-decalone (XIII) can be

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Synthesis of Steroids and Related Compounds. Communication 48. Synthesis of Trans-6--(p-Hydroxyphenyl)-1-Decalone

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SOV/62-59-12-17/43

obtained in over 40% yield by reduction of (X) with lithium in liquid ammonia. Trans-6-(p-hydroxyphenyl)--1-decalone (XIV) was obtained in 42% yield (mp 166-167°) by demethylation of (XIII). Dimethyl sulfate reacts with (XIV), forming the starting (XIII). Compounds (XI) (mp 155-156°) and (XIV) (mp 166-167°) are new analogs of estrone, they have low estrogenic activity. I. A. Eskin and M. P. Danilova took part in this work. There are 7 references, 6 Soviet, 1 U.S. The U.S. reference is: L. Fieser, J. Am. Chem. Soc., 58, 2314 (1936).

ASSOCIATION: Zelinskiy Institute of Organic Chemistry, Academy of Sciences, USSR (Institut organicheskoy khimii imeni N. Z. Zelinskogo Akademii nauk SSSR)

SUBMITTED: March 25, 1958

Card 5/5

S/020/60/132/04/26/064
B011/B003

5.3400

AUTHORS: Gunar, V. I., Zav'yalov, S. I.

TITLE: A New Synthesis of Phytol [1]

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 4, pp. 829-831

TEXT: In a previous paper (Ref. 1) the authors showed that the alkylation of dihydroresorcinol with prenyl bromides (II) leads to a series of cyclic β-diketones which contain isoprenoid chains. In the article under review the authors proved that these derivatives of dihydroresorcinol may be used, inter alia, for the synthesis of phytol (XIII). In the hydrolytic cleavage of 2-prenyl- and 2-geranyldihydroresorcinols (III) and (IV) large quantities of corresponding keto acids (V) and (VI) were formed. The latter reacted smoothly with an excess of lithium methyl, with the two functional groups participating. In the dehydration of the keto alcohols (VII) and (VIII) obtained by means of potassium bisulfate and in the subsequent complete hydrogenation

Card 1/2

A New Synthesis of Phytol

S/020/60/132/04/26/064
B011/B003

of the unsaturated ketones (IX) and (X) on platinum oxide the following known ketones were obtained: tetrahydrogeranylacetone (XI) and hexahydrofarnesylacetone (XII) (Ref. 2). In accordance with Refs. 2 and 3 the ketone (XII) can be easily converted into phytol (XIII). Thus, a new method of synthesizing isoprenoid compounds was elaborated. It permits extension of the chain of vinyl alcohols (I) by eight atoms. Here, large yields of ketones (XI) and (XII) can be obtained. There are 3 references, 2 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

PRESENTED: February 12, 1960, by B. A. Kazanskiy, Academician

SUBMITTED: January 19, 1960

Card 2/2

ZAV'YALOV, S.I.; GUNAR, V.I.; VASIL'YEV, A.F.

Direct hydroxylation of 2-substituted dihydroresorcinols. Izv. AN SSSR Otd.khim.nauk no.5:938 My '60. (MIRA 13:6)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.
(Resorcinol) (Hydroxylation)

GUNAR, V.I.; ZAV'YALOV, S.I.

Syntheses based on 2-prenyldihydroresorcinol. Izv.AN SSSR Otd.khim. nauk no.5:937 My '60. (MIRA 13:6)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo Akademii nauk SSSR.

(Resorcinol)

GUNAR, V.I.; ZAV'YALOV, S.I.

New synthesis of phytol. Dokl.AN SSSR 132 no.4:829-831 Je '60.
(MIRA 13:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR. Predstavleno akademikom B.A.Kazanskhim.
(Phytol)

NAZAROV, I.N.; ZAV'YALOV, S.I.

Synthesis of steroid compounds and related substances. Report No.49: Synthesis of steroid analogs lacking the B ring. Izv. AN SSSR.Otd.khim.nauk no.6:1080-1083 Jl '60.
(MIRA 13:7)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo Akademii nauk SSSR.
(Steroids)

ZAY'YALOV, S.I.

S/062/60/000/009/010/021
B023/B064

AUTHORS: 1. Reutov, O. A. and Beletskaya, I. P.; 2) Reutov, O. A. and Lovtsova, A. N.; 3. Vinogradova, L. P. and Zav'yalov, S.I.

TITLE: 1. Electrophilic and Radical Substitution of Iodine for the Mercury Atom in Organo-mercury Salts. 2. Introduction of Dichloro Carbene Into the Metal - Haloid Binding. 3. Interaction of 2-Formyl Cycloalkanones With Hydrogen Peroxide

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 9, pp. 1716-1717

TEXT: 1. In the course of their studies of the mechanism of the electrophilic substitution on the saturated carbon atom, the authors investigated the reaction of the organo-mercury salts: ethyl ester of α-bromo mercury phenyl acetic acid (I) and the benzyl mercury bromide (II) with iodine. The electrophilic substitution of the mercury atom was carried out under the action of iodine in cadmium iodide solution. The reaction took place in aqueous dioxan: $R - HgBr + I_2 \xrightarrow{CdI_2} R - I + HgBr\ I$.

Card 1/4

In case (I) the reaction proceeds rapidly, in case (II) much slower. The reaction kinetics of (II) with iodine was spectrophotometrically recorded and examined by the titration method. The reaction proceeds rapidly in the presence of CdI_2, i.e., photochemically by the radical mechanism. The reaction of (I) with iodine in the absence of CdI_2 (radical reaction) is of first order with respect to iodine and of zeroth order with respect to the organo-mercury salt. The kinetics was spectrophotometrically recorded. Finally, a very important effect of the structural factor upon the rate of the electrophilic and radical substitution of the iodine atom for the mercury atom on saturated carbon was determined. 2. The authors found that the dichloro carbene forming in the benzene medium under the action of tertiary potassium butylate upon chloroform, is capable of linking itself into the mercury - chlorine binding under the formation of trichloro methyl mercury compounds. Sublimate reacts with dichloro carbene under the formation of trichloro methyl mercury chloride (melting point 130°).

Card 2/4

Found: Hg 56.83%. Calculated: Hg 56.60%. Phenyl mercury chloride forms trichloro methyl phenyl mercury (melting point 113.5-114°). Trans-β-chloro vinyl mercury chloride forms trichloro methyl-trans-β-chloro vinyl mercury (melting point 80-81°). Found 53.06%. Calculated: 52.73%. The latter compound is converted under the action of chlorine or bromine into trichloro methyl mercury chloride or trichloro methyl mercury bromide, respectively. At present, the authors are investigating the possibility of synthesizing trichloro methyl organometallic compounds of other metals with dichloro carbene. 3. The authors found that under the action of hydrogen peroxide at low temperatures 2-formyl cyclopentanone and 2-formyl cyclohexanone undergo an oxidative splitting and yield adipic and pimelic acid, respectively. This rare reaction of 2-formyl cycloalkanones may be used for the production of a variety of dicarboxylic acids, beginning with the cyclic ketones. There are 2 Soviet references.

Card 3/4

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova (Moscow State University imeni M. V. Lomonosov). (Reutov, O.A., Beletskaya, I. P., Lovtsova, A. N.). Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR) (Vinogradova, L. P. and Zav'yalov, S.I.)

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Card 4/4

ZAV'YALOV, S.I.; GUNAR, V.I.; KUDRYAVTSEVA, L.F.

Chemistry of dihydroresorcinol. Report No. 6: New steps in the synthesis of phenanthrene derivatives based on dihydroresorcinol. Izv. AN SSSR.Otd. khim. nauk no.11:2009-2013 N '60.
(MIRA 13:11)

1. Institut organicheskoy khimii im.N.D.Zelinskogo AN SSSR.
(Phenanthrene) (Resorcinol)

GUMAR, V.I.; ZAV'YALOV, S.I.

Chemistry of dihydroresorcinol. Part 8: Syntheses based on 2-prenyldihydroresorcinol. Zhur. ob. khim. 30 no.11: 3658-3663 N'60. (MIRA 13:11)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Resorcinol)

ZAV'YALOV, S.I.; KONDRAT'YEVA, G.V.

Chemistry of dihydroresorcinol. Report No.5: Chemical properties and enol ethers of dihydroresorcinol and its derivatives. Izv.AN SSSR Otd.khim.nauk no.8:1429-1434 Ag '60. (MIRA 15:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Resorcinol) (Enols)

VINOGRADOVA, L.P., ZAV'YALOV, S.I.

Reaction of 2-formylcyclohexanone with hydrogen peroxide. Zhur. ob. khim. 30 no.12:4110 D '60. (MIRA 13:12)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Cyclohexanecarboxaldehyde) (Hydrogen peroxide)

BARB'YE, M. [Barbier, M.]; VINOGRADOVA, L.P.; ZAV'YALOV, S.I.

Application of the chromatographic plate method to β-dicarbonyl compounds. Izv. AN SSSR. Otd. khim. nauk no. 1:162-163 Ja '61. (MIRA 14:2)

1. Institut fiziko-khimicheskoy biologii, Parizh i Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Carbonyl compounds) (Chromatographic analysis)

VINOGRADOVA, L.P.; ZAV'YALOV, S.I.

β-Dicarbonyl compounds. Report No.9: Reaction between β-dicarbonyl compounds and hydrogen peroxide. Izv. AN SSSR. Otd.khim.nauk no.8:1482-1486 Ag '61. (MIRA 14:8)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Carbonyl compounds)
(Hydrogen peroxide)

ZAV'YALOV, S.I.; VINOGRADOVA, L.P.

β-Dicarbonyl compounds. Report No.10: Distinct characteristics in the chemical behavior of aliphatic and cyclic β-dicarbonyl compounds. Izv. AN SSSR. Otd.khim.nauk no.9:1640-1645 S '61. (MIRA 14:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Carbonyl compounds)